

## REMARKS

1. Independent claims 1 and 13 are amended to incorporate features of claim 2, as further supported by Applicants' specification, for example, in paragraph [0025]. Claims 2, 5, 9, 14, 16, and 18 are amended to clarify antecedent basis. Claims 5 and 15 are also amended to correct a typographical error. Claim 9 is further amended to incorporate features such as in Applicants' specification paragraph [0008], [0024], and [0032] – [0034]. Claims 21-23 are newly added, for example as supported in Applicants' specification in paragraph [0008], [0024], and [0032] – [0034]. Claims 1-23 thus remain pending in this application, of which claims 1, 9 and 13 are independent. No new matter is added.

## RELATED APPLICATIONS

2. Paragraph [0001] is modified to provide the serial numbers and corresponding status of the patent applications referenced on page 1 of the application. References to Attorney Docket Numbers have been deleted. No new matter has been added.

## CLAIM REJECTIONS

3. Claims 1-8, 13-20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,055,632 (“Deegan”). Applicants respectfully disagree. To anticipate a claim, Deegan must teach every element of the claim and “the identical invention must be shown in as complete detail as contained in the ... claim.” *MPEP 2131* citing *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987) and *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989). Deegan does not teach every element of claims 1-8 and 13-20.

Amended claim 1 recites a method of implementing firmware updates to a programmable part within a circuit board, and requires the following steps:

- (a) creating an image file of firmware used to program the part; storing the image file at a firmware server;
- (b) integrating the programmable part with the printed circuit board;
- (c) networking with the firmware server; and

(d) automatically polling the firmware server to download the firmware, to program the programmable part.

Claim 1 is not taught or anticipated by Deegan. In the method of claim 1, the printed circuit board initiates the download of the firmware by automatically *polling* the firmware server over the network connection. Deegan does not teach or disclose 'polling'. Contrary to the Examiner's statement, an Ethernet link [Deegan, col. 6, lines 5-14] does not constitute 'polling' as described in claim 1 (and, for example, as supported in Applicants' specification, paragraph [0025]). In fact, Deegan specifically recites that "the user of the programmable controller system 10 provides the firmware provider with he *[sic]* IP address of the programmable controller system 10" [col. 6, lines 5-10]. Deegan further recites that "the firmware of the processor module 20 can be upgraded immediately *after the user requests an upgrade*" [col.6, lines 10-14, emphasis added]. Thus, the system and method of Deegan does not automatically poll the firmware server to download the firmware.

Claims 2-8 depend from claim 1 and benefit from like arguments; but these claims have additional features that patentably distinguish over Deegan. For example, claim 2 requires that the step of polling (clearly not shown in Deegan) includes downloading the image file to the printed circuit board. In another example, claim 3 requires "integrating a serial chip with the printed circuit board, the serial chip polling the firmware server to download the firmware, the programmable part having bootstrap software to download the firmware from the serial chip to the programmable part." Deegan does not, at all, teach or disclose integrating a serial chip with the printed circuit board for purposes of polling the firmware server and downloading firmware, as required by claim 3. Deegan describes a "daughterboard" that attaches to the printed circuit board through an 'appropriate mounting scheme' [see Deegan, column 5, lines 25-30], and is thus not integrated with the printed circuit board.

We kindly ask for reconsideration of claims 1-8.

Independent claim 13 requires the following step elements:

- (a) creating one or more image files of firmware used to program the parts;
- (b) storing the image files at a firmware server; and
- (c) polling the firmware server such that at least one of the image files downloads to at least one of the circuit boards for programming at least one of the programmable parts.

Note that step (c) of claim 13, as amended, also requires the step of polling, such as argued above in connection with claim 1. Claim 13 thus benefits from like arguments. For example, we have shown that Deegan is silent to teaching or suggestion of "polling" of a server to download and program programmable parts, and that Deegan in fact teaches away from this feature due to recitations cited above.

As claims 14-20 depend from claim 13, they too benefit from these arguments. We accordingly request reconsideration also of claims 13-20.

3. Claims 9-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Deegan. The following is a quotation from the MPEP setting forth the three basic criteria that must be met to establish a *prima facie* case of obviousness:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion of motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP, §2142, citing *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 9 is modified to require that the printed circuit board poll the firmware server. Similar to claims 1 and 13, argued above, claim 9 thus patentably distinguishes over Deegan. Specifically, Deegan does not disclose polling to download and

program a programmable part, and thus cannot render claim 9 obvious according to 35 U.S.C. §103. Reconsideration of claim 9 is thus requested.

Claims 10-12 depend from claim 9 and benefit from like arguments; but these claims have additional features that patentably distinguish over Deegan. For example, claim 10 recites that the interface servers sequentially connect with a plurality of printed circuit boards. Deegan, on the other hand, recites that the processor module and the communication daughterboard attach to each other through an 'appropriate mounting scheme' [column 5, lines 25-29]. Deegan thus does not teach that a daughterboard sequentially connects with a plurality of processor modules, as required in claim 10. Claim 12 recites a connector that has one or more pins that interface in a programming configuration with pads or pins on the plurality of printed circuit boards to program the programmable parts. Deegan also does not teach of a connector with one or more pins that interface in a programming configuration. Deegan does not mention 'pins' or 'pads' at all.

Reconsideration is thus requested for dependent claims 10-12.

New dependent claim 23 depends from claim 9, and further recites bootstrap software, used to program the programmable part in conjunction with polling. Deegan is silent to bootstrap software and therefore does not teach the elements of claim 23.

In addition, note that Deegan does not teach "a manufacturing line," as in the preamble of claim 9. Deegan describes a system for upgrading a plurality of processor modules [column 9, lines 15-35]. The programmable controllers are included in systems that controls the output states of a plurality of industrial output devices [column 4, lines 56-65]. Further, Deegan states "Normally, the firmware provider is the manufacturer of the programmable controller system 10" [col. 4, lines 37-39], and further states that "the computer 40 is remotely located, e.g., in the possession of the firmware provider in a different city" [col. 5 line 67 through col. 6, line 2]. Thus the location of the programmable controller is not with the manufacturer. Deegan cannot therefore suggest a manufacturing line as in claim 9. Applicant respectfully disagrees with Examiner's statements that 'Deegan shows the parts which are connected separately (Fig. 1) for suggesting an assembly connection in manufactory'. Deegan,

Fig. 1, shows a single connected system and does not suggests a manufacturing process.


Deegan also does not teach or suggest interface servers that interface with the one or more programmable parts, to program the programmable parts with image files. See, e.g., Applicants' specification, paragraph [0031]. Deegan specifically teaches that 'daughterboards' interface with the processor module. Deegan's daughterboard has a micro-processor, a non-volatile memory, a random access memory, a dual port RAM, and an Ethernet interface [column 5, lines 31-34]. The daughter board, as described by Deegan, provides only a communication mechanism between a network and the processor board, and does not in any way teach of an interface server as in claims 6, 7, 9, 10, 11, 12, 16, 17, 18, 19, 21.

For the reasons discussed above, Applicant believes that amended claims 1-23 are not anticipated and are non-obvious in view of the cited references, and their reconsideration and allowance are now requested.

The addition of three dependent claims costs an additional \$54.00. The Examiner is thus authorized to charge the appropriate fee to Deposit Account No. 08-2025. Applicants believe no further fees are due in connection with this Amendment and Response; however, if any additional fee is deemed necessary, the Examiner is likewise authorized to charge such fee to Deposit Account No. 08-2025.

Respectfully submitted,

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